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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,416	10/23/2003	Seung Hyun Yoon	2013P109	1910

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EXAMINER	
HALIYUR, VENKATESH N	

ART UNIT	PAPER NUMBER
2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/693,416	YOON ET AL.	
	Examiner	Art Unit	
	VENKATESH HALIYUR	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 (claim16 is canceled)* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-13 and 15* is/are rejected.

7)☐ Claim(s) *8,14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/14/2008 has been entered.

2. Claims 1-16 are pending in the application. Claim 16 canceled.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-7, 9-13, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veres et al. [US Pat: 6,807,156] in view of Riddle et al. [US Pat: 6,591,299].

Regarding claim 1, Veres et al in the invention of "Scalable Real-Time Quality of Service Monitoring and Analysis of Service Dependent Subscriber Satisfaction in IP Networks" disclosed a traffic measurement system **(Figs 3-4)** comprising: a plurality of measurement devices **(probes or processes monitoring traffic at points A & B of Fig 3)** that collect packets flowing through Internet links between routers **(monitors A & B monitoring links between routers, Fig 3, col 8, lines 51-65)**, extract **(capture)** traffic data required to analyze traffic from the collected packets **(item 120 of Fig 4),** and process the extracted data into predetermined flow types **(microflows, col 8,lines 66-67,col 9, lines 1-5)**; and an analysis server that identifies applications **(subscriber identification and applications)** of traffic by analyzing the traffic data transferred from the plurality of measurement devices as a whole **(col 9, lines 6-10)**, classifies the identified applications into predetermined traffic types, and outputs the classification result **(col 9, lines 10-12),** but fails to disclose analyzing the traffic data includes analyzing payload data included in the traffic data and the traffic types including a traffic type that is identified based on an application signature from other flows since the port numbers are exchanged through other control flows. However, Riddle et al in the invention of "Method for Automatically Classifying Traffic with Enhanced Hierarchy in a Packet Communications Network" disclosed a method for examining the data contained in a traffic flow for classifying the packets based on an application signature of the packet flow exchanged over several application ports **(examine the packet header to classify the traffic distinguished by a signature in the packet flow exchanged over known and dynamic ports, col 12, lines 45-67, col 13, lines 1-67, Figs 3,4A/B)**.

Therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to use the method of examining the data contained in a traffic flow for classifying the packets based on an application signature of the packet flow exchanged over application ports as taught by Riddle et al in the system of Veres et al to analyze every part of the traffic data packet to accurately classify the packets in to predetermined application type that are exchanged through the flows. One is motivated as such in order to accurately classify the packets by analyzing the payload data included in the traffic data to minimize the drop rate of the packets to enhance the quality of service.

Regarding claim 2, Veres et al disclosed that a plurality of time receiving devices that extract time signals from a GPS satellite or a CDMA base station to synchronize the times of the plurality of measurement devices **(col 2, lines 50-53).**

Regarding claim 3, Veres et al disclosed each of the plurality of measurement devices comprises: a packet collection unit that collects the packets flowing through the Internet lines from router connection lines and records the collection times of the packets **(packet filtering process, item 120 of Fig 4, col 8, lines 66-67, col 9, lines 1-5)**; a flow generation unit **(item 140 of Fig 4)** that generates flows using the packets having the same data **(microflow processor, item 130 of Fig 4)**, including a target address, a protocol, and a port number **(col 6, lines 21-26)**, from the packets collected by the packet collection unit **(captured packets stored in shared memory for flow identification, col 9, lines 6-13)**, extracts data required for detailed analysis of the applications after analyzing the contents of the packets **(col 6, lines 20)**, and stores the

extracted data according to the flow **(database of monitored microflows)**; and a transfer unit that transfers the data stored in the flow generation unit to the analysis server according to a predetermined time interval **(col 9, lines 14-45)**.

Regarding claims 4-5, Veres et al disclosed that the packet collection unit collects the packets by using one of tapping **(probing or sniffing)**, port mirroring **(application dependent port, FTP, HTTP, TCP, col 3, lines 18-33)** and signal distribution and the data required for detailed analysis of the applications are application signatures **(service dependent applications, RTP, FTP, WWW etc.,)** for identifying the applications in payload of the packets **(col 4, lines 44-61)**.

Regarding claim 6, Veres et al disclosed wherein the analysis server **(microflow processor, item 130 of Fig 4)** comprises: a data receiving unit **(network interface and shared memory, item 110 of Fig 4, col 9, lines 14-29)** that receives the packet data from the plurality of measurement devices **(probes or processes monitoring traffic at points A & B of Fig 3)**; a traffic analysis unit **(prefiltering processor, item 120 of Fig 4)** that analyzes the data provided from the plurality of measurement devices via the data receiving unit as a whole **(col 9, lines 30-45)**, and classifies the applications into the traffic types **(WWW, FTP, Streaming Media, VoIP application dependent module, item 140 of Fig 4, col 9, lines 5-13)** according to the analysis result; a data storing unit **(database of monitored subscribers/microflows, Fig 4)** that stores the traffic analysis result **(delay, throughput, efficiency, packet loss etc.,)** of the traffic analysis unit; and a user interface that displays the traffic analysis result stored in the

data storing unit to a user after processing the traffic analysis result into various types desired by the user **(user reports, col 4, lines 44-67).**

Regarding claim 7, Veres et al disclosed that the analysis server further comprises a report output unit **(report, item 140 of Fig 4)** that processes the traffic analysis result from the traffic analysis unit into a predetermined report type **(col 5, lines 31-67)** and stores the processed data in the data storing unit **(database of monitored subscribers/microflows, Fig 4)**, and the report is displayed **(microflow record)** to the user through the user interface **(col 11, lines 23-29)**.

Regarding claim 9, Veres et al disclosed a traffic analysis method performed in a traffic measurement system **(probes or processes monitoring traffic at points A & B of Fig 3)** that collects packets flowing through Internet links between routers **(monitors A & B monitoring links between routers, Fig 3, col 8, lines 51-67)**, analyzes traffic, and identifies the applications of the packets **(col 9, lines 1-29)**, the method comprising: classifying a first traffic type **(TCP)** whose applications are identified using only port numbers included in flow data that is processed into a predetermined type **(col 6, lines 21-26)**; classifying a second traffic type **(IP)** whose applications are identified by collecting application headers and application identifiers in the packets, from the flow data remaining after the first traffic type is classified **(col 9, lines 30-41)**; classifying a third traffic type **(UDP)** whose applications are identified by analyzing the flow data remaining after the second traffic type is classified **(col 9, lines 1-4)** and reverse-direction flow data **(both directions of traffic stream)** of the flow that are measured at different points as a whole **(col 10, lines 50-57)**; classifying a fourth traffic type **(RTP)**

whose applications are identified by analyzing the flow data remaining after the third traffic type is classified and flow data measured at different points, since port numbers for the applications are not predetermined **(col 10, lines 62-67, col 11, lines 1-2)**; and classifying a fifth traffic type **(VoIP, item 140 of Fig 4)** whose applications cannot be identified using the flow data remaining after the fourth traffic type is classified **(col 9, lines 60-67),** but fails to disclose analyzing the traffic data includes analyzing payload data included in the traffic data and the traffic types including a traffic type that is identified based on an application signature from other flows since the port numbers are exchanged through other control flows. However, Riddle et disclosed a method for examining the data contained in a traffic flow for classifying the packets based on an application signature of the packet flow exchanged over several application ports **(examine the packet header to classify the traffic distinguished by a signature in the packet flow exchanged over known and dynamic ports, col 12, lines 45-67, col 13, lines 1-67, Figs 3,4A/B)**. Therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to use the method of examining the data contained in a traffic flow for classifying the packets based on an application signature of the packet flow exchanged over application ports as taught by Riddle et al in the system of Veres et al to analyze every part of the traffic data packet to accurately classify the packets in to predetermined application type that are exchanged through the flows. One is motivated as such in order to accurately classify the packets by analyzing the payload data included in the traffic data to minimize the drop rate of the packets to enhance the quality of service.

Regarding claim 10, Veres et al disclosed the flow data is packets having the same target address **(destination port),** the same protocol **(FTP)**, and the same port number among the packets flowing through the Internet lines **(col 11, lines 34-45).**

Regarding claim 11, Veres et al disclosed determining whether identification data of the fourth traffic type **(RTP)** is present in traffic included classified into the first traffic type **(TCP)** and extracting and storing the application signature of the fourth traffic type, after classifying the first traffic type **(col 9, lines 30-37, Fig 4).**

Regarding claims 12-13, Veres et al disclosed extracting and storing the application signature of traffic classified into the third traffic type **(UDP)** when traffic classified into the second traffic type **(IP)** is backward traffic of traffic classified into the third traffic type, after classifying the second traffic type **(col 10, lines 50-67)** and determining whether identification data of the fourth traffic type **(RTP)** is present in traffic classified into the second traffic type and extracting and storing the application signature **(service dependent applications, RTP, FTP, WWW etc.,)** of the fourth traffic type, after classifying the second traffic type **(col 11, lines 1-12, Fig 4).**

Regarding claim 15, Veres et al disclosed processing the classified traffic types into predetermined report types desired by a user and storing or providing the processed report through a user interface, after classifying the fifth traffic type **(col 15, lines 57-63, Fig 8c).**

Response to Arguments

3. Applicant's argument, see remarks filed on 02/13/2008 with respect to rejection of claims 1-16 have been fully considered and is persuasive.

With respect to applicant's argument for claims 1, 9 that Veres and Kloth references fail to teach or suggest the limitations of "the traffic types including a traffic type that is identified based on an application signature from other flows since the port numbers are exchanged through other control flows" the examiner agrees and therefore a new search was performed. However a new ground(s) of rejection has been made using Veres and a newly found Riddle et al reference as in this office action.

Allowable Subject Matter

5. Claims 8, 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Any inquiry concerning this communication or earlier communications should be directed to the attention to Venkatesh Haliyur whose phone number is 571-272-8616. The examiner can normally be reached on Monday-Friday from 9:00AM to 5:00 PM. If

attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached @ (571)-272-7884. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (571)-272-2600 or fax to 571-273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

/Venkatesh Haliyur/
Examiner, Art Unit 2619

/Edan Orgad/
Supervisory Patent Examiner, Art Unit 2619